

**Triple Trunking  
Mobile / Base Radio Scanner**

*Thank you for purchasing your Triple Trunking Mobile / Base Radio Scanner from **RadioShack**. Your scanner scans conventional frequencies and trunked systems. Please read this user's guide before installing, setting up and using your new scanner.*

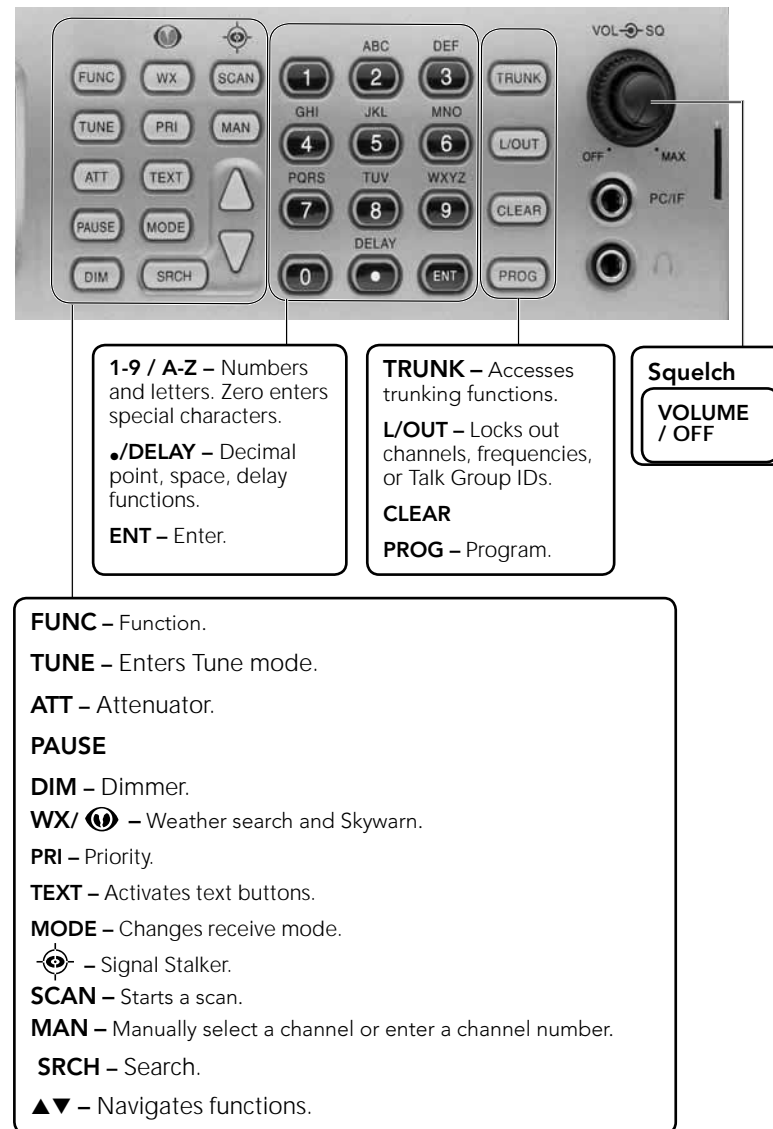
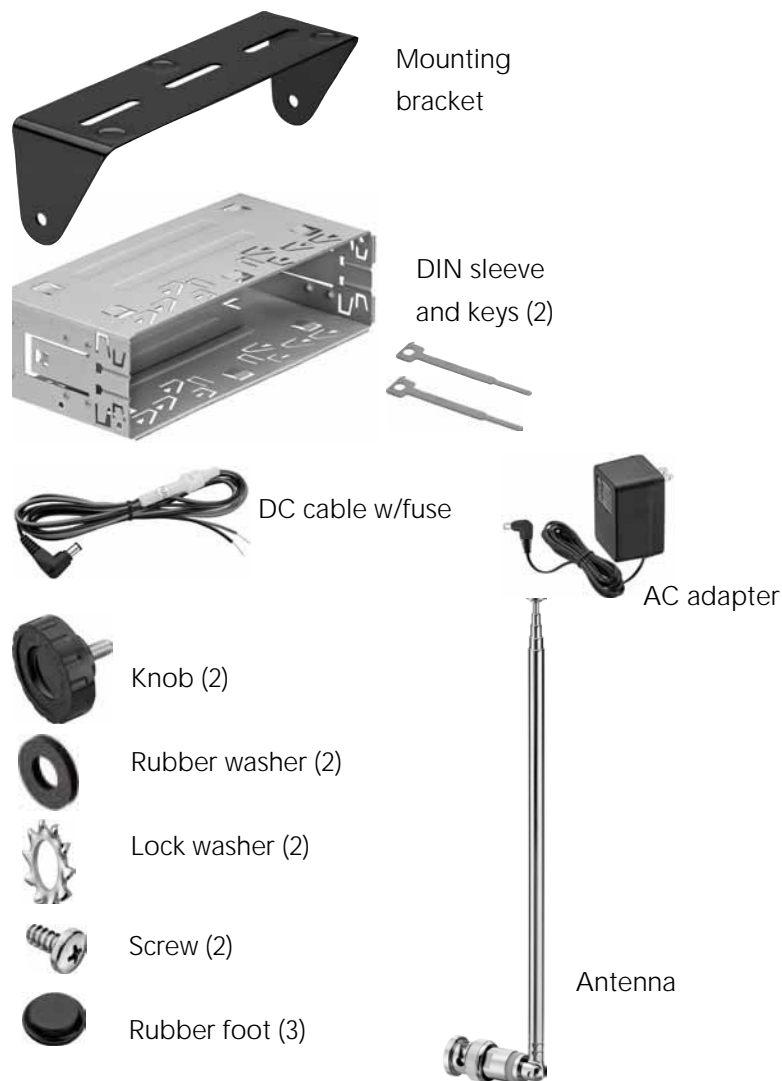


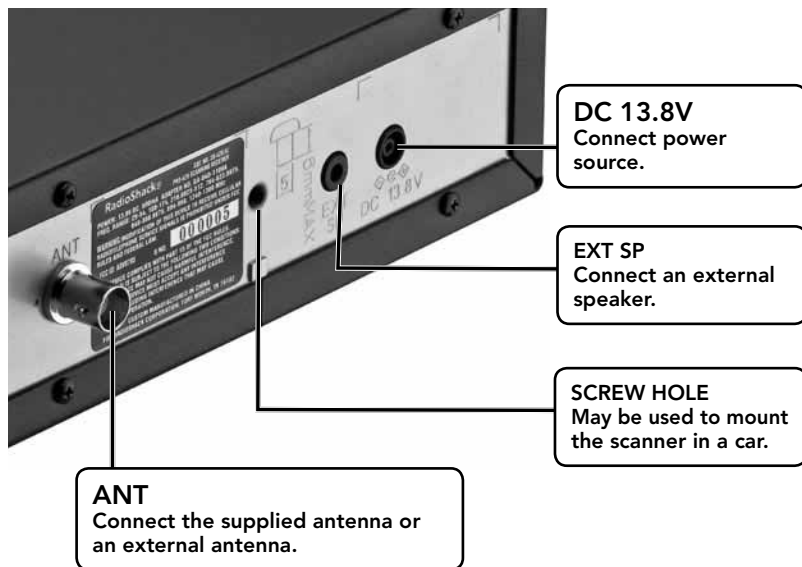
## **What's Included**

Scanner	Antenna	Screw (2)
Mounting bracket	DIN sleeve and keys (2)	Rubber washer (2)
Lockwasher (2)	Rubber feet (3)	Knob (2)
AC adapter	DC cable with fuse	User's Guide
Preprogrammed Frequency Addendum		

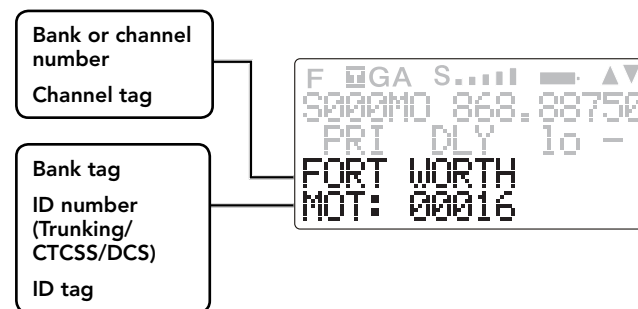
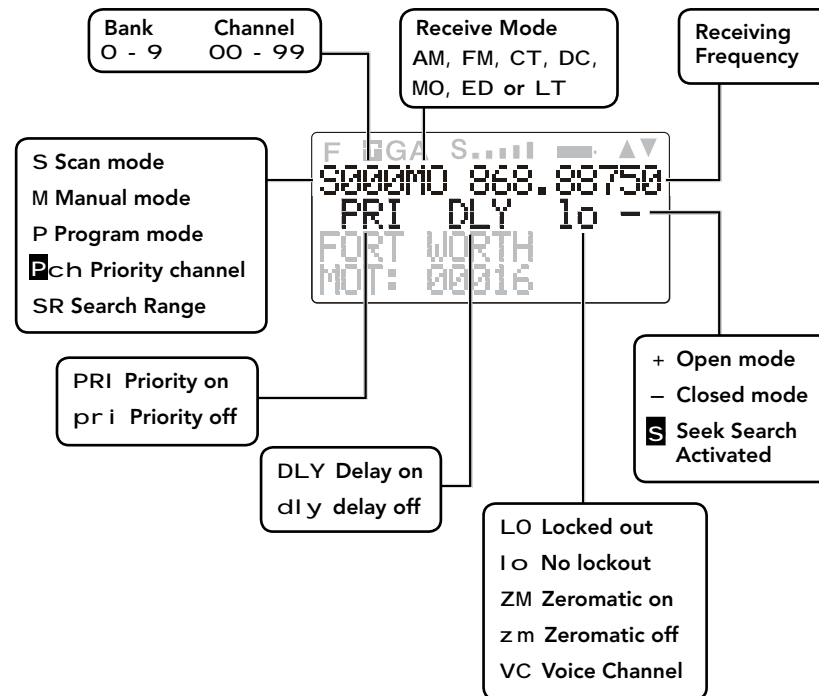
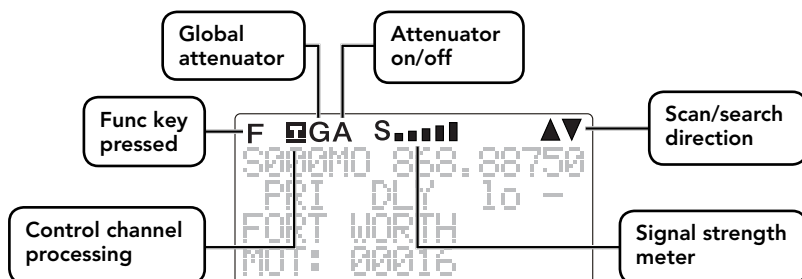
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## Scanner Display



## Installing Your Scanner

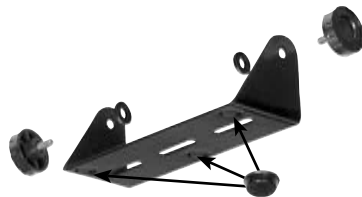
You can mount your triple trunking scanner in your vehicle or use it as a base station.

### Setting Up a Mobile Base

You can place your scanner on a desk, shelf, or table to use it as a base station. Because the speaker is on the bottom of the scanner, you can use the mounting bracket to elevate your scanner off the surface for better sound.

#### To use the scanner on a flat surface:

1. Attach the three protective rubber feet to the mounting bracket.
2. Remove the paper backing from each rubber washer and stick one inside of each bracket's ear, aligning the washer's hole with the bracket's hole.
3. Slide the scanner into the bracket, aligning the scanner's side holes with the holes in the bracket, then screw the mounting knobs into the scanner.



### Bracket Mounting

You can mount your scanner under or on top of your vehicle's dashboard using the mounting bracket.

**CAUTION: AVOID AIRBAG DEPLOYMENT ZONES.** Mounting in deployment zones can prevent the airbag from performing properly and may result in injury.

1. Use the supplied mounting bracket as a template to mark positions for the two mounting screws.
2. At the marked positions, drill holes slightly smaller than the screws.

**Note:** When drilling holes, avoid obstructions behind the mounting surface.

3. Attach the mounting bracket to your vehicle's surface using the supplied screws and lockwashers.



## Dashboard Installation

If you are unsure how to install your scanner in your vehicle, consult your automobile manufacturer, dealer, or a qualified installer.

**Note:** To mount in your dashboard, you must connect an external antenna and speaker.

1. Before installing, confirm your scanner fits in the desired mounting area and you have all the necessary materials. Your scanner requires a  $2 \times 7\frac{1}{8} \times 5\frac{5}{16}$  inch (50 × 180 × 135 mm) space.
2. Remove the four rear screws and pull off the black case before installing your scanner.
3. Install the DIN sleeve into the opening in your dashboard, lip facing out.
4. Push out the top and bottom tabs to hold the sleeve firmly in place.
5. Slide the scanner into the sleeve until it locks in place.



To remove your scanner from the DIN sleeve, insert the two keys straight into the scanner's front panel and pull the scanner out.



## Connecting an Antenna

To connect an external antenna, follow the installation instructions supplied with the antenna. Use 50-ohm coaxial cable, such as RG-58 or RG-8X, to connect an outdoor antenna. For lengths between 50 and 100 feet, use RG-8X low-loss dielectric coaxial cable. For lengths over 100 feet, use RG8. You also may need a BNC adapter (not supplied).

**Warning:** Use extreme caution when installing or removing an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna contacts a power line, touching the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. DO NOT attempt to do so yourself.

### To attach the supplied antenna:

1. Align the antenna slots with the tabs on the scanner, and slide the antenna into place.
2. Turn and push in until the antenna locks into place.



## Powering Your Scanner

You can power your scanner from a wall outlet, or from your vehicle's battery.

**Note:** You must use a power source that supplies 12V DC and delivers at least 600 mA. Its center tip must be set to positive and its plug must fit the scanner's **DC 13.8V** jack. The supplied AC adapter and DC power cord meet these specifications. Using a power source that does not meet these specifications could damage the scanner or the adapter.

### Wall Outlet

1. Connect the tip of the supplied AC adapter to the **DC 13.8V** jack at the rear of your scanner.
2. Plug the AC adapter into your wall outlet.

**Note:** To prevent electric shock, do not use the AC adapter's polarized plug with an extension cord, receptacle, or outlet unless you can fully insert the blades to prevent blade exposure. To avoid injury, do not connect the provided power adapter to a ceiling outlet.



### Vehicle (Power Socket)

To power your scanner from a 12V power source in your vehicle, such as a cigarette-lighter socket, you need a 12V, 600 mA DC cigarette-lighter adapter (not supplied), available at your local RadioShack store.

1. Insert the adapter's barrel plug into the scanner's **DC 13.8V** jack.
2. Plug the adapter's other end into your vehicle's cigarette lighter or power socket.

**Note:** When you use a cigarette-lighter adapter, you might hear electrical noise from your engine while scanning. This is normal. This is less of a problem if you connect directly to the vehicle fuse box.

### Vehicle (Direct)

1. Disconnect the cable from your vehicle battery's negative (–) terminal.
2. Ground the black wire of the supplied DC power cord to your vehicle's chassis. The grounding screw must make complete contact with your vehicle's metal frame.
3. Connect the red wire of the supplied DC power cord to a voltage source that turns on and off with the ignition switch, such as a spare accessory terminal in your vehicle's fuse box.
4. Insert the power cord's barrel plug into the scanner's **DC 13.8V** jack.
5. Reconnect the cable to your vehicle battery's negative (–) terminal.



### Headphones and Speakers

You can plug headphones or a speaker (neither included) into your scanner.

To use headphones, connect the plug into the headphone jack on the front panel. Using headphones automatically mutes the scanner's speaker.

To use an external speaker, connect the plug into the **EXT SP** jack on the rear panel.

### Listening Safely

Even though some earphones/headphones let you hear outside sounds when listening at normal volume levels, they still present a traffic hazard.

To protect your hearing, follow these guidelines:

- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting before listening. Turn on the scanner, and adjust the volume to a comfortable level.
- After you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.
- Do not wear headphones while driving. This can create a traffic hazard and is illegal in some areas.

## Keytones and Brightness

Your scanner features a backlit keypad and display for easy viewing and sounds a tone each time you press a key.

### To set the keytone:

1. Turn on the scanner. "Multi-system Trunking Scanner" appears.
2. While "Multi-system Trunking Scanner" remains on screen, press **1** to turn on the keytone or **2** to turn it off.

### To change the backlight mode:

Repeatedly press **DIM** to adjust display backlight brightness to dim, off, or bright.

## Delay

Sometimes several seconds can pass between transmissions. To avoid missing a reply, a delay is automatically set for each channel. The scanner pauses for 2 seconds after a transmission stops before it resumes scanning or searching.

### To turn the delay on and off:

1. Press **•/DELAY**. "DLY" appears if the delay is on.
2. To turn on the delay, press **•/DELAY** again. "dly" appears if the delay is off.

## Squelch and Attenuator

The squelch and attenuator control the scanner sensitivity. If you hear a hissing noise, the scanner will remain on the current channel.

### To set squelch:

1. Turn **SQUELCH** down (counterclockwise) until you hear noise.
2. Turn **SQUELCH** up (clockwise) a little past where the noise stops. The higher the squelch is set, the stronger the signal required to break the squelch.
3. If noise starts breaking the squelch, turn **SQUELCH** up to decrease the scanner's sensitivity. To hear weaker signals, turn **SQUELCH** down to increase its sensitivity.

With the attenuator on, the scanner might not receive weak signals, but immunity to adjacent strong signals is improved.

You can reduce interference using two attenuator modes:

- Global – (Default) The attenuator setting is applied to all channels, bands, or groups.
- Normal – Lets you set the attenuator in each channel, band, or group.

**Note:** You cannot set the attenuator while scanning.

### To set the attenuator mode:

1. To set Global mode, press **FUNC** and then **ATT**. On the display "G" appears."
2. To set Normal mode, press **FUNC** and then **ATT**. On the display "G" disappears.

Then for each channel:

- On – Press **ATT**. "A" appears.
- Off – Press **ATT** again. "A" disappears."



## Scanner Setup

A **frequency**, expressed in kHz or MHz, is the tuning location of a station.

Your scanner saves frequencies to **channels** and groups the channels into banks. The scanner's 10 **banks** each hold 100 channels (1,000 channels total).

The scanner is preset to the most common AM or FM receive modes for each frequency range. However, some amateur transmissions may operate in a different mode. If the transmission sounds weak or distorted, you may have the channel set to the wrong **receive mode**:

**AM** – Amplitude Modulation, primarily used for aircraft, military, some amateur and government transmissions.

**FM** – Frequency Modulation, used for most public safety transmissions, broadcast, business, and most amateur radio transmissions.

**CT** – FM transmissions with Continuous Tone Coded Squelch System (CTCSS)

**DC** – FM transmissions with Digital Coded Squelch (DCS)

**MO** – Motorola Trunking System

**ED** – EDACS Trunking System

**LT** – LTR Trunking System

**Note:** If you change the receive mode using **MODE** key, the scanner shows the receive mode for small caps (ex. **f m**, **am**, **ct**, or **dc**). If you want to change the default setting, press **FUNC** then press **MODE**.

## Defining a Channel

Go to [www.radioreference.com](http://www.radioreference.com) for the latest frequency references.

### To define a channel:

1. Press **MAN**.
2. Enter the bank (0-9) and channel number (00-99) where you want to store the frequency (Example: 101 for Bank 1, Channel 1).
3. Press **MAN** again. "M" and the bank and channel number appear.
4. Press **PROG**. "M" changes to "P".
5. Use the number keys to enter the frequency (including the decimal point). If you make a mistake, press **CLEAR** to delete a single digit or hold **CLEAR** about 2 seconds to start over.

**Note:** Your scanner automatically rounds to the nearest valid frequency. For example, if you enter 151.553, your scanner rounds to 151.550.

6. If necessary, press **MODE** to change the receiving mode.
7. Press **ENT**.

If the frequency is already stored in the bank, "Dupl.Freq. ChXXX" appears. To copy the duplicate frequency anyway, press **ENT** or press **CLEAR** to cancel.

If you made a mistake in Step 5, "Invalid Freq." briefly appears and the scanner beeps when you press **ENT**. Go back to step 5 again.

8. Press **MAN** again. "M" and the bank and channel number appear.

**Note:** For information about adding text tags to a channel or bank, see "Text Tags" on Page 47.

## Copying a Frequency

When you copy a frequency, all the channel conditions, including mode, are also copied.

### To copy a frequency:

1. Press **TUNE**.
2. Tune the frequency you want to copy.
3. If necessary, press **MODE** to change the receiving mode.
4. Press **FUNC** then **ENT**. "Bank 9 Store?" appears.
5. To select a new bank, press the bank number.
6. Press **ENT**. "Channel Stored!" appears briefly.  
If the frequency is already stored in the bank, "Dupl.Freq. Chxxx" appears. To copy the duplicate frequency anyway, press **ENT** or press **CLEAR** to cancel.
7. Press **MAN**.

## Deleting Saved Frequencies

### To delete a saved frequency:

1. Press **MAN**.
2. Use the number keys to enter the frequency's channel number.
3. Press **MAN**.
4. Press **PROG**. M changes to P.
5. Press **FUNC**.
6. Press **CLEAR**. "0.0000" appears.

### To delete all saved frequencies in a bank:

1. Press **PROG**. M changes to P.
2. Press **FUNC**.
3. Use the number keys to enter the bank number. "Bank ## selected. Fn + CLR to delete all frequencies." appears.
4. Press **FUNC** then **CLEAR**. "Clear entire bank?" appears.
5. Press **1** to clear all. Pressing any other key aborts.

## CTCSS and DCS

CTCSS and DCS allow multiple users to share a single radio frequency without hearing each other's transmissions. Your scanner features an advanced, CTCSS and DCS decoder that displays CTCSS or DCS codes when available.

### To define a channel's CTCSS or DCS code:

1. Press **PROG**. M changes to P.
2. Navigate to the channel.
3. Enter a conventional frequency.
4. Press **MODE** until the desired mode (CT or DC) appears with the default search code value.
5. Press **FUNC**, then **MODE**.
6. Use the ▲ or ▼ to select the desired CTCSS or DCS code.

**Note:** You can enter the code manually. The scanner automatically fills in the code. See "Appendix C" on page 60 for a list of codes.

7. Press **ENT**.

To save a CTCSS or DCS code, press **ENT** while the code appears.

## Scanner Cloning

You can transfer the programmed data to and from another PRO-163 or PRO-164 scanner using a connecting cable which has 1/8-inch (3.5mm) stereo (TRS) phone plugs on both ends (not supplied).

You can also upload or download programmed data to or from a PC using a USB cable available through your local **RadioShack** store. The application software is available online at [www.starrsoft.com](http://www.starrsoft.com) and [www.scancat.com](http://www.scancat.com), or use a search engine to find "scanner programming software."

### To clone the scanner data:

1. Turn on both scanners.
2. Connect the connecting cable to each scanner's **PC/IF** jack.  
\*\* CLONE MODE \*\* appears.
3. Press **▲**. "Confirm to send data?" appears.
4. Press **1** to send the data to the other unit or press any other key to cancel.
5. To exit the clone mode, remove the cable.

**Note:** "CLONE MODE Incorrect Model" appears if you connect a scanner other than a PRO-163 or PRO-164.

## Searching

You can search for transmissions using the preprogrammed search bank, which is divided into eight search bands.

### Seek Search

When Seek Search is active, the scanner stops on active frequencies for five seconds and then resumes searching automatically.

#### To activate Seek Search:

1. Press **FUNC** then **7**. "Seek Search ON" appears briefly and **S** appears on the display.
2. To turn off Seek Search, press **FUNC** then **7** again. "Seek Search OFF" appears briefly.

### Search Banks

#### To search preprogrammed search banks:

1. Press **SRCH** repeatedly to select a bank.

Bank	Band	Freq. Chart
SR0	Marine	Page 55
SR1	CB	Page 56
SR2	FRS/GMRS/MURS	Page 57
SR3	Public Safety	Page 58
SR4	Aircraft	Page 59
SR5	Amateur Bands	Page 59
SR6	Railroad	Page 59
SR7	Limit search (User changeable)	

SR3 to SR5 banks contain several groups. To turn off a group, press the group number; the group number disappears. To turn the group back on, press the group number again.

2. Adjust the Squelch. After the set delay, the scanner starts searching. When the scanner finds an active frequency, it stops searching.
3. To pause while searching, press **PAUSE**. The scanner stops searching and \*\*\* **PAUSED** \*\*\* appears. To resume, press **PAUSE** again.
4. If the scanner stops on an unwanted frequency, you can press **L/OUT** to lock out the frequency.

In the SR6 Railroad and SR7 Limit Search bands, press **FUNC** then **▲** or **▼** to start searching up from the lowest or down from the highest frequency.

#### To search banks SR0-SR2:

1. Press **SRCH** repeatedly to select SR0, SR1, or SR2.
2. To search the entire band, press **FUNC** then **SRCH**. "MAN" (Manual select) or "SRCH" (searches through the band) appears.

The scanner starts searching and "SRCH" appears on the display. When the scanner finds an active frequency, it stops searching.

Press **FUNC** then **SRCH** again to return to the previous mode.

3. To select a channel while "MAN" appears on the display, press a channel number or use **▲** or **▼**.
4. Adjust the Squelch.
5. If the scanner stops on an unwanted frequency, you can press **L/OUT** to lock out the frequency. For more information, see **Locking Out Frequencies** on Page 25.
6. To pause while searching, press **PAUSE**. The scanner stops searching and \*\*\* **PAUSED** \*\*\* appears. To resume, press **PAUSE** again.

## Zeromatic

While searching, the scanner stops if a transmission triggers the squelch setting. A narrow-band FM transmission can have a deviation of +/- 5 KHz, and the actual total bandwidth, including the tails of the sidebands, can be even greater. However, search intervals smaller than that can stop your scanner short of the correct (center) frequency.

The Zeromatic function allows the scanner to find the correct center frequency for search banks SR3, SR4, SR5, SR6 and SR7. Zeromatic automatically tunes the step-increment frequency closest to the center frequency.

#### To activate Zeromatic:

1. Press **FUNC** then **0**. "Zeromatic ON." appears briefly, then "ZM" appears.
2. To turn Zeromatic off, press **FUNC** then **0** again. "ZM" changes to "zm."

## Programming a Search Range

#### To program the search range of Bank SR7:

1. Repeatedly press **SRCH** to select SR7.
2. Press **PROG** then **SRCH**. "Enter SR7 Search Range Limits" appears. L blinks for the lower-limit of the range.
3. Use the number keys to enter the lower-limit frequency (including the decimal point).
4. Press **ENT**. U blinks for the upper-limit of the range.
5. Use the number keys to enter the upper-limit frequency (including the decimal point), then press **ENT**.

**Note:** If either entered frequency is incorrect, "Invalid Freq" appears briefly.

6. Press **SRCH** to start searching.
7. Adjust the squelch. After the set delay, the scanner starts searching. When the scanner finds an active frequency, it stops searching.



## Signal Stalker II


Signal Stalker II provides a powerful tool to rapidly detect, monitor and save frequencies of nearby or high-power transmissions. Signal Stalker II resembles more expensive portable frequency counters, but provides many advantages over typical portable frequency counters.

Signal Stalker II is more sensitive than portable frequency counters and will detect transmissions at a greater distance. Signal Stalker II rapidly searches the RF spectrum in 1 MHz segments. If it detects a signal, Signal Stalker II searches in finer steps until the signal source is found.

Signal Stalker II can search all frequencies, or you can define frequency ranges, to avoid ranges with constant activity, such as paging or broadcast transmitters.

### To use Signal Stalker II:

1. Hold the Signal Stalker button (  ) for approximately 1 second.
2. To change the scanned band (All Band or PubSafety Band), press **FUNC** then Signal Stalker (  ).  
For a list of Signal Stalker bands, see "Appendix D" on page 61.

3. To turn off a bank, press the bank or group number while Signal Stalker II is active.
4. To turn off Signal Stalker, hold the Signal Stalker button (  ) again.

**Note:** Priority mode is not available while using the Signal Stalker II.

## Special Signal Stalker

Special Signal Stalker II divides the frequency range by 1 MHz segments. If you lock out 5 frequencies within 1 MHz segment, the scanner will skip that segment in subsequent sweeps.

### To use Special Signal Stalker II:

1. Press **FUNC** while Signal Stalker II is active.
2. Press **▲** or **▼**. "Sp. Stalker" appears for Special Signal Stalker II.
3. To turn off Special Signal Stalker II, press **FUNC** and then **▲** or **▼** again.

## Locking Out Frequencies

When you lock out frequencies during a search, the scanner continues searching, but ignores the locked out frequencies. You can lock out up to 50 frequencies in each bank. If you try to lock out more, "L/O Memory Full!" appears.

While using Signal Stalker II, you can lock out 150 frequencies if searching All Bands and 50 frequencies while searching PubSafety frequencies. If you lock out 5 frequencies within a 1 MHz segment, the scanner will skip that segment in subsequent sweeps.

**Notes:**

- If you lock out all the frequencies in a search bank and only that search bank is activated, "All ranges Locked out!" appears and the scanner does not search.
- Signal Stalker II still performs a fine step search for locked out signals. Signal Stalker II will not stop on the signal, but scan may take longer.

**To lock out a frequency:**

When the scanner stops on a frequency, press **L/OUT**.

**To review and unlock frequencies:**

1. Press **SRCH** to enter search mode.
2. Press **FUNC** then **L/OUT**. The first locked-out frequency and lockout list appear. If the search bank has no locked-out frequencies, "No Lockout" appears.
3. Press **▲** or **▼** to review the list. The current position and the total locked-out number also appear as "Lockout XX of YY." (Example: Lockout 10 of 30.)
4. (Optional) To unlock a frequency, select the frequency then press **CLEAR**.
5. Press **FUNC** then **L/OUT** again to exit.

**To unlock all frequencies in a search bank:**

1. Press **SRCH**.
2. Select the search bank.
3. Press **FUNC** then press **L/OUT**. The Lockout list appears.
4. Press **FUNC** then **6**. "Clear entire list?" appears.
5. Press **1**. "List cleared" appears. Pressing any other key cancels the clearing.

**Saving Found Frequencies****To save a frequency found during a search:**

1. When the scanner stops on a frequency, press **FUNC** then **PROG**. "Store in ChXXX?" appears and the frequency flashes.
2. To change the target channel, enter the bank and channel number.
3. Press **ENT**. "Channel Stored!" appears briefly, then the search resumes.

## Scanning

Scanning sequentially checks all saved channels for activity. You must save frequencies into channels to scan. The scanner does not scan empty channels or unsaved frequencies.

You can increase the scanning speed by locking out channels with continuous transmissions, such as a weather channel, or turning off entire banks. Turning off a bank prevents the scanner from scanning any channels within the bank. You cannot turn off all banks. There must be at least one active bank to scan.

### To scan:

1. Press **SCAN**. The scanner checks all unlocked channels in the active banks. To change the scan direction, press ▲ or ▼.
2. To stop on a channel, press **PAUSE**.
3. To lock out a channel, when the scanner stops on the channel, press **L/OUT**.
4. To turn off a bank, press the bank's number so the bank's number disappears. To turn on a bank, press the number key so the bank's number appears.

## Locking Out Channels

You can increase the scanning speed by locking out channels with continuous transmissions.

### To lock out a channel:

1. Press **MAN**.
2. Enter the bank and channel number or use ▲ or ▼ to select the channel.
3. Press **L/OUT**. "LO" changes to "LO."
4. To unlock a locked-out channel, press **L/OUT** again.

### To review all locked out channels:

1. Press **MAN**.
2. Repeatedly pressing **FUNC** and then **L/OUT** to view each locked-out channel.
3. To unlock a channel, press **L/OUT**. "LO" changes to "LO."
4. When you finish reviewing locked-out channels, press **MAN**.

**Note:** You can manually select any channel in a bank, even in turned-off banks.

## Priority Scanning

In addition to the 1,000 programmable memory channels, your scanner has one Priority channel. When Priority is turned on, the scanner checks the Priority channel every 2 seconds. This lets you scan without missing a transmission on the Priority channel.

**Note:** Priority scanning does not operate for trunking transmissions. Priority check can seem random during peak hours.

### To turn on the priority feature:

1. Press **PRI** so "pr i" changes "PRI" on the display during scanning.
2. To turn off Priority, press **PRI** again.

### To make an existing channel a Priority channel:

1. Press **MAN**.
2. Use the number keys to enter the bank and channel number.

**Note:** The Priority channel cannot be a trunking channel (MOT, ED, or LTR).

3. Press **MAN**.
4. Press **FUNC**, then hold **PRI** until the display blinks.

#### To modify the Priority channel:

1. Press **PROG**.
2. Press **PRI**.
3. Use the number keys to enter the frequency.
4. Press **ENT**.

**Note:** If the frequency is incorrect, "Invalid Freq" appears briefly.

## Weather Alerts

The Federal Communications Commission (FCC) has allocated channels for use by the National Oceanic and Atmospheric Administration (NOAA). NOAA broadcasts Specific Area Message Encoding (SAME) alerts that include digitally encoded data about the severity of the alert.

**Note:** Regulatory agencies in other countries have also allocated channels for use by their weather reporting authorities.

If you program a weather channel as the Priority channel, your scanner can detect the 1050 Hz weather alert tone. All alerts are received (FIPS settings are ignored), and the scanner stays on the Priority channel only if the scanner detects a weather alert.

#### To perform a weather scan:

Press **WX**. Your scanner scans through the weather bands then stops on the next available weather broadcast.

#### To program a weather channel into priority channel:

1. Press **WX**.
2. Select the weather channel.
3. Press **FUNC** and then **PRI**.

## SAME Standby Mode

SAME alerts include FIPS codes to identify areas, established by the US Census bureau. You can set your scanner to alert for all areas or limit weather alerts to up to 10 specific areas by FIPS code.

**Note:** The National Weather Service maintains a current list of FIPS codes at [www.nws.noaa.gov/nwr/](http://www.nws.noaa.gov/nwr/).

#### To program a FIPS code:

1. Press **WX** and listen to identify the weather station with the strongest signal.
2. Press **FUNC**, and then **PROG** to access the FIPS code entry table.
3. Use **▲** or **▼** to select the desired FIPS code storage location.
4. Use the number keys to enter the FIPS code. The format of a FIPS code is:

Subdivisions	State Code	County Code
0-9 (0=entire area)	01-50 (00=all states)	XXX (000=all counties)
Example: 048439 (0=All; 48=Texas; 439=Tarrant County)		

5. (Optional) To label the code, press **TEXT** and use the letter buttons to enter text.



6. Press **ENT** to store the code. Repeat this process to program additional FIPS codes.
7. Press **L/OUT** to lock out or enable specific FIPS entries.
8. Press **WX** to exit the FIPS code entry table.

#### To review stored FIPS codes:

1. Press **WX** then a number key.
2. Press **L/OUT** to change the lockout status.

**Note:** For information about adding text tags to a FIPS code, see **"Text Tags"** on Page 47.

#### To enter SAME standby:

1. Press **FUNC** and then **WX**. The scanner will monitor the selected weather radio station for alerts with FIPS codes that match the codes you entered in the FIPS entry table.
2. To exit SAME standby, press **FUNC** and then **WX**.

#### Notes:

- The scanner searches the weather frequencies while in SAME standby mode when squelch is off.
- The scanner sounds an alert or beep when it receives the SAME code. After five minutes, the alert stops and the scanner beeps every ten seconds.
- 3. Press any key except **DIM** to reset the scanner.

#### To test the weather alert:

1. Press **WX**. Your scanner scans through the weather bands.
2. Set the Squelch to the lowest setting so that you hear static.
3. Press **FUNC** and then **WX**. **"SAME Standby"** appears.

4. Hold **ENT** for about 2 seconds. The display indicates the type of message, and the scanner sounds an alert or series of beeps.
5. Press any key except **DIM** to stop testing.

## Skywarn

Skywarn is an organized group of trained weather observers. Using Skywarn, you can hear trained observers in your area call in official reports to a control station that relays those reports to NOAA and other emergency agencies.

Before using this feature, save local Skywarn frequencies for your area into Channel 999.

#### To use Skywarn:

Hold the Skywarn button (  ). **"SKY"** appears.

If the skywarn channel is empty, **"Not programmed"** appears.

## Monitoring

When monitoring, the scanner remains on a single channel.

**Note:** Your scanner features a power save circuit that allows the scanner to “sleep” briefly while waiting for a call on a monitored channel.

### To monitor a channel:

1. Press **MAN**.
2. Use the number keys to enter the channel number and press **MAN**.

### To find a frequency to monitor:

1. Press **TUNE**. The currently-tuned frequency and **\*\*\* PAUSED \*\*\*** appear.
2. (Optional) Use the number keys to change the frequency and press **ENT**.
3. Press **PAUSE**. The scanner searches for a frequency. To change the tune direction, press **▲** or **▼**. When the scanner finds an active frequency, it stops.
4. Press **PAUSE** to monitor the frequency.

### To set a default tuning frequency:

1. Press **MAN**.
2. (Optional) Use the number keys to enter the frequency number.
3. Press **FUNC**, then **TUNE**. The scanner saves the frequency. For example, if you save 145.31000 MHz, when you press **TUNE**, the scanner starts tuning at 145.31000 MHz.

## Trunking Setup

Instead of transmitting on a specific frequency, trunking systems choose one of several frequencies during a 2-way radio transmission and simultaneously transmit a Talk Group ID that identifies the 2-way radio user. This allows trunking systems to allocate fewer frequencies to multiple 2-way radio users.

## Defining a Trunking Bank

You can define any of the 10 banks as a trunking bank, but each bank can only scan for one system: Motorola, EDACS (GE/Ericsson), or LTR (EF Johnson).

**Note:** Trunking banks can contain both trunking and non-trunking channels. For information about saving frequencies into channels, refer to “**Defining a Channel**” on page 17.

### To define a Trunking Bank:

1. Press **PROG**, then press **TRUNK** to enter the ID program mode.
2. Press **FUNC**, then use **▲** or **▼** to select a bank.
3. Repeatedly press **MODE** to select a trunking mode (Motorola, EDACS, or LTR).
4. Press **PROG**.

## Trunking Modes

In **Closed** mode, the scanner stops only on transmissions with saved and unlocked Talk Group IDs. This lets you focus a scan on the frequencies you have identified, ignoring other transmissions.

In **Open** mode, the scanner stops for transmissions on any unlocked channel. This lets you search for Talk Group IDs that you can then save.

While scanning, “–” appears for Closed mode and “+” appears for Open mode under the channel storage bank’s number. When the scanner stops on a channel, “OPEN” or “CLOSED” appears.

#### To set Open or Closed mode for a bank:

1. Press **MAN**.
2. Use ▲ or ▼ to select a bank.
3. Press **FUNC** then •/DELAY. “Bank OPEN” or “Bank CLOSED” appears.

## Motorola Trunking Setup

Motorola systems can allocate as few as five frequencies or up to several thousand groups of users in three categories:

- **Type I** – User groups are assigned to fleets. To scan, you must program a fleet map into the scanner.
- **Type II** – The Talk Group ID contains 4 or 5 digit numbers.
- **Hybrid** – Combines Type I and Type II formats.

**Note:** For information about saving frequencies into channels, refer to “Defining a Channel” on page 17.

### Fleet Maps

For Motorola Type I and hybrid systems, you must program a fleet map before saving Talk Group IDs.

#### To program a fleet map:

1. Press **PROG** then **TRUNK**.
2. Press **FUNC**, then press ▲ or ▼ to select the bank.
3. If necessary, repeatedly press **MODE** to select “Motorola.”

4. Press **FUNC**, then press **8**. “Size Code Setting” appears, with Block 0 selected.
5. Enter the size code for Block 0, supplied with the Type I system information, or try one of the following common fleet maps.

Size Codes	BLOCKS							
	0	1	2	3	4	5	6	7
1	S11	S11	S11	S11	S11	S11	S11	S11
2	S4	S4	S4	S4	S4	S4	S4	S4
3	S4	S4	S4	S4	S4	S4	S12	—
4	S12	—	S4	S4	S4	S4	S4	S4
5	S4	S4	S12	—	S4	S4	S4	S4
6	S3	S10	S4	S4	S12	—	S12	—
7	S10	S10	S11	S4	S4	S4	S4	S4
8	S1	S1	S2	S2	S3	S3	S4	S4
9	S4	S4	SO	SO	SO	SO	SO	SO
10	SO	SO	SO	SO	SO	SO	S4	S4
11	S4	SO	SO	SO	SO	SO	SO	SO
12	SO	SO	SO	SO	SO	SO	SO	S4
13	S3	S3	S11	S4	S4	SO	SO	SO
14	S4	S3	S10	S4	S4	S4	S12	—
15	S4	S4	S4	S11	S11	SO	S12	—
16	S3	S10	S10	S11	SO	SO	S12	—

**Note:** For Motorola Type II, enter 15.

6. Press **ENT**. The next block appears.
7. Repeat steps 5-6 for each block. If you make a mistake, press **CLEAR** and enter the correct size code.

### Base and Offset Frequencies

To receive Motorola VHF and UHF system transmissions, you must program applicable **base** and **offset** frequencies. In the 800 MHz trunking band, you can select a base frequency (normal or offset), but in the 900 MHz trunking band, you do not need to set the base frequency.

You can get information about base and offset frequencies from [www.radioreference.com](http://www.radioreference.com).

#### UHF-Lo (406-512 MHz)

To program Motorola base and offset frequencies:

1. Press **PROG** then **TRUNK** to enter the ID program mode.
2. Press **FUNC**, then press **▲** or **▼**. The bank number increases or decreases by one. If you hold down **▲** or **▼**, the bank number increases or decreases continuously.
3. If necessary, repeatedly press **MODE** to select "Motorola."
4. Press **FUNC** then **2**. The screen displays the Base, Offset, and Step with the **B** in Base blinking.
5. If necessary, use the number keys to enter a new Base frequency and press **ENT**. The **O** in Offset blinks.
6. If necessary, use the number keys to enter a new Offset frequency and press **ENT**. The **S** in Step blinks.

**Note:** If you try to program an offset frequency in the UHF-Hi bands (806-960 MHz), the scanner ignores the entry.

7. While the **S** in Step blinks, repeatedly press **▲** or **▼** to select the step number: 5.0, 6.25, 10.0, 12.5, 15.0, 18.75, 20.0, 25.0, 30.0, 31.25, 35.0, 37.5, 40.0, 43.75, or 50.0 kHz, then press **ENT**.
8. Press **PROG**.

#### UHF-Hi (806-960 MHz)

To program 800 MHz Motorola trunking:

1. Press **PROG** then **TRUNK** to enter the ID program mode.
2. Press **FUNC**, then press **▲** or **▼**. The bank number increases or decreases by one. If you hold down **▲** or **▼**, the bank number increases or decreases continuously.
3. If necessary, repeatedly press **MODE** to select "Motorola."
4. Press **FUNC** then **3**. "NORMAL" appears.
5. Press **▲** or **▼** to select **NORMAL** or **SPLINTER** and press **ENT**. If you are uncertain about the base frequency, use **NORMAL**.

The base frequency in **NORMAL** is 851.0125 MHz. The base frequency in **SPLINTER** is 851.0000 MHz. If you cannot receive with the **NORMAL** setting, change to **SPLINTER**.

### EDACS Trunking Setup

**EDACS** (GE/Ericsson) systems transmit Talk Group ID data on a dedicated control channel. Scanning requires clear reception of the control channel at all times, so EDACS systems generally have a smaller usable area. You can manually select the data channel, but an external antenna can greatly improve EDACS scanning.

If you are programming frequencies for an EDACS system, you must store them in the Logical Channel Number order (usually listed as LCN#).

**Note:** For information about saving frequencies into channels, refer to "Defining a Channel" on page 17.

## LTR Trunking Setup

**LTR** systems assign each frequency a Home Repeater (HR) number and are frequently programmed with unique ID codes for each radio. LTR Talk Group IDs are organized in a specific order, and to scan, you must program the frequencies in HR order. LTR systems are used primarily by businesses, such as taxicabs, delivery trucks, and repair services.

LTR systems use a Home Repeater as part of their Talk Group ID.

**Note:** For information about saving frequencies into channels, refer to **“Defining a Channel”** on page 17.

### To save a correct Home Repeater:

1. Save the LTR channels in any order.
2. Set the bank to Open mode.
3. Manually select LT channels and watch the LTR data on the display.  
Your scanner displays the LTR Talk Group ID and a number preceded by **“R.”** The **“R”** number is the Home Repeater number for the transmission.
4. The assigned Home Repeater channel must equal the Home Repeater number. For example, R12 must be programmed into Channel 12.

## Searching for Talk Group IDs

If you tune the scanner to an active Motorola control channel, the Motorola System ID and the approximate control channel message decode success rate appears. This helps you identify the system and the reception quality. When the scanner decodes control channel data from a Motorola system, COTRL appears on the display.

### To search for Talk Group IDs:

1. Set the bank to Open mode.
2. Press **SCAN**. The scanner scans through all unlocked channels in the active banks.
3. When the scanner stops on a transmission, press **TRUNK**. The scanner displays the ID location:

Sub-bank.	ID Location
0-4	00-29
Example: 2-01	

**Note:** If the ID has already been saved, **“ID was saved”** appears. If you try to store more than 150 talk group IDs in a bank, **“Memory Full!”** appears.

## Saving a Talk Group ID

Each of the 10 banks contains 5 **sub-banks** that each hold 30 Talk Group IDs. (You can save up to 1,500 Talk Group IDs.) When the scanner receives a trunked transmission, it searches the associated sub-bank for the Talk Group ID to decode data for Motorola, EDACS, and LTR systems.

### To define a Talk Group ID:

1. Press **PROG**, then press **TRUNK** to enter the ID program mode.
2. Press **FUNC**, then use **▲** or **▼** to select a bank.
3. Repeatedly press **MODE** to select a trunking mode (Motorola, EDACS, or LTR).
4. Repeatedly press **TRUNK** to select the sub-bank.
5. Press **▲** or **▼** to select the location where to store the Talk Group ID.

- Use the number and decimal point keys to enter the Talk Group ID:

For ED Talk Group IDs, you can enter either a decimal or AFS code. The default setting is decimal ID entry.

To use the AFS code, press **FUNC** then **2**, "AFS Format" appears for about 2 seconds. You can then enter the AFS code.

- Press **ENT**.

#### Notes:

- If you make a mistake, "Invalid ID value" appears when you press **ENT**. Go back to Step 3.
- If you entered an ID that is already stored in same bank, "Dupl. ID of X-XX appears." To store the ID code, press **ENT**. To cancel, press **CLEAR**.
- For information about adding text tags to a Talk Group ID, see "Text Tags" on Page 47.

## Deleting Talk Group IDs

You can delete an individual Talk Group ID or all Talk Group IDs in a bank.

#### To delete a Talk Group ID:

- Press **PROG** then **TRUNK**.
- Press **FUNC**, **▲** or **▼** to select ID memory.
- Press **FUNC** then **CLEAR**.

#### To delete ALL talk group IDs in a bank:

- Press **PROG**.
- Press **TRUNK** to enter a Talk Group ID memory mode.
- Select a Talk Group ID bank using **FUNC**, **▲** or **▼**.

- Press **FUNC** then **6**. "Clear entire list? Press 1 to clear all, any other key aborts" appears.
- To clear the Talk Group IDs, Press **1**. To cancel the deletion, press any key except **1**.

## Saving Trunking Channels

Trunking channels are defined using the same procedure for non-trunking channels. In each bank, you can mix channel modes, including conventional, but you can scan only one trunking mode at a time, either EDACS, Motorola, or LTR.

Because Motorola control frequencies change daily, you should save all the control frequencies in the same bank. If you do not know the control frequency, save all the Motorola frequencies in the same bank.

EDACS frequencies are assigned Logical Channel Numbers (LCN) and organized in a specific order. To scan correctly, you must program the frequencies in LCN order, starting with Memory 01.

#### Notes:

- Trunked modes (MO, ED, and LT) can only be selected for frequencies above 137 MHz that use trunking operations.
- For information about adding text tags to a channel, see "Text Tags" on Page 47.

## Trunk Scanning

In each bank, you can mix conventional channels and frequencies in a bank. However, you can scan only one trunking mode at a time, either EDACS, Motorola, or LTR.

Press **SCAN**. The scanner scans through unlocked channels in active banks. To focus on trunk scanning, you can turn off banks that contain only conventional channels. To change the scanning direction, press **▲** or **▼**.

For Motorola channels, your scanner displays the Talk Group ID memory location, received frequency, voice channel (VC), and the Motorola ID number.

### Notes:

- Your scanner automatically mutes the audio while it decodes control channel data. However, we recommend you turn **SQ** clockwise and leave it set to a point just after the hiss stops. This lets the scanner quickly acquire the data channel.
- For Motorola trunking systems, more than one talk group can transmit at a time. If you manually tune the scanner, you will hear the talk group on that channel, but the display will alternate between all active Talk Group IDs.
- For EDACS and Motorola (above 406 MHz range), the scanner monitors the control channel between each transmission to identify talk groups. For some Motorola (under 512 MHz range) and LTR systems, the scanner uses the subaudible data sent with each transmission to identify talk groups.

## Trunking Delay

You can set a Talk Group ID delay separately from the channel delay. When active, the scanner checks the Talk Group ID for the delay time when a transmission ends.

### To set a Talk Group ID delay:

1. Press **FUNC** then **•/DELAY** while you are programming the Trunk Group ID. "ENTER key saves. 2.0 seconds" appears.
2. Use **▲** or **▼** to set ID Delay: None, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, or 4.0 seconds.
3. Press **ENT**.

## Locking Out Talk Group IDs

You can only lock out Talk Group IDs when the scanner is in the Closed mode.

### To lock out Talk Group IDs:

1. Press **PROG** then **TRUNK**.
2. Press **FUNC**, **▲** or **▼** to move to the desired bank.
3. Press **▲** or **▼** to select the ID.
4. Press **L/OUT** to lock out the ID. "I O" changes to "LO."
5. To remove the lockout from a trunking ID, manually select the ID memory, and press **L/OUT**. "LO" changes to "I O."

**Note:** You cannot clear all lockouts from a talk group at the same time.

### To review locked-out Talk Group IDs:

1. Press **PROG** then **TRUNK**.
2. Press **FUNC** then **L/OUT**. The first locked out ID appears. If the ID memory bank has no locked-out ID, you hear the low beep tone.
3. Press **▲** or **▼** to scroll through the list.
4. Press **PROG** to exit.

## Turning Off Sub-Banks

To turn off a sub-bank:

1. Press **TRUNK** repeatedly to select the desired sub-bank.
2. Press **FUNC** then **1** to turn the sub-bank on or off.

To turn off a sub-bank while scanning:

1. When the scanner stops on a transmission, press **FUNC**.
2. Press **TRUNK**. The display indicates which sub-bank is turned on or off. The active sub-bank number appears.
3. Press **FUNC** and the number of the sub-bank you desire to turn on or off. For example to turn sub-bank 4 on or off, press **FUNC**. Then press **4**.

**Note:** This function activates when the receiving channel bank is Closed mode.

## Talk Group ID Hold

You can set your scanner to follow a trunking signal that you want to track during scanning.

To set Talk Group ID Hold:

1. While the scanner is stopped on a voice channel (**VC** appears), hold down **TRUNK** until **ID hold ON** appears.

When the scanner receives a transmission, the **"S"** on the display changes to **"H."**

2. To release ID hold, press **SCAN** or **TRUNK**.

## Additional Information

### Scanner Maintenance

- Handle the scanner carefully; do not drop it.
- Use and store the scanner only in normal temperature environments.
- Keep the scanner dry; if it gets wet, wipe it dry immediately.
- Keep the scanner away from dust and dirt, and wipe it with a damp cloth occasionally to keep it looking new.

### Text Tags

While scanning, if the scanner stops on a channel with a saved text tag, the text appears on the display. Otherwise, the Talk Group ID appears on the display.

You can define text tags to identify channels, Talk Group IDs, banks or FIPS Codes.

To define a Text Tag:

1. To define a text tag for a channel:
  - Press **MAN**.
  - Enter the bank and channel number.
  - Press **PROG**. **M** changes to **P**.
  - Go to step 5.
2. To define a text tag for a Talk Group ID:
  - Press **PROG**.
  - Press **TRUNK**.
  - Press **FUNC** then **▲** or **▼** to select the desired bank.
  - Press **TRUNK** to select the desired sub-bank.
  - Press or hold down **▲** or **▼** to select the desired group ID.
  - Go to step 5.



3. To define a text tag for a bank:
  - Press **PROG**.
  - Press **FUNC** then press bank number. "Bank X (0 through 9) selected" appears.
  - Go to step 5.
4. To define a text tag for a FIPS code, first access the FIPS code definition. See "**SAME Standby Mode**" on Page 31.
5. Press **TEXT**.
6. Enter the text using the text keys (up to 16 characters).  
 When you press a key, the associated letters appear on the screen. Press the corresponding number. For example, when you press **ABC**, **A**, **B**, and **C** appear on the display. To select **A**, press **1**. To select **B**, press **2**. To select **C**, press **3**.  
 To enter a number, press **1**, then press the number key.  
 To enter lowercase character or second-set character for the 0 key, press the text key and then press **FUNC**.
7. If you make a mistake, press **▲** or **▼** to move to the character you want to change.
8. Press **ENT** to save the text.

#### To display the Talk Group ID:

1. If the scanner displays the text tag for a transmission, press **TEXT**. The ID code appears.
2. Press **TEXT** again to cancel.

## Troubleshooting

Issue	Solution
<b>The scanner does not function.</b>  <b>Cause:</b> The AC or DC adaptor might not be connected.  If using a DC adaptor, the DC adaptor socket might be dirty.	Make sure the adaptor's barrel plug is fully inserted into the PWR jack. The center tip of the adaptor's barrel plug must be set to positive.  Unplug the DC adaptor from the power source and clean the socket, or check the adaptor's internal fuse.
<b>The scanner does not receive stations or reception is poor.</b>  <b>Cause:</b> Antenna might not be connected correctly.  Squelch setting might be too sensitive.  Attenuator might be on so your scanner might not receive weak signals.	Check the antenna.  Check the squelch.  Check the Attenuator.  If these solutions do not work, turn the scanner off then on again, or initialize the scanner.

Issue	Solution
<b>The scanner does not scan.</b>  <b>Cause:</b> The squelch might not be adjusted correctly.  One channel or no channels stored in the scanner.	Turn SQ clockwise.  Save more frequencies into channels.
<b>Error message appears when trying to upload or download from a computer.</b>  <b>Cause:</b> Your computer is using Windows XP and does not have the necessary USB cable driver.	Download and install the "Windows XP Driver to resolve PC connection error" file from your scanner's Product Support page or the Software Download page on <a href="http://www.RadioShack.com">www.RadioShack.com</a> .  Then make your connection and try again. Be sure the correct COM port is selected in device manager.

## Birdie Frequencies

All scanners have signals created inside the scanner's receiver. These birdie frequencies can interfere with transmissions on the same frequencies. If the interference is not severe, you might be able to turn SQ clockwise to omit the birdie.

### To find the birdies:

1. Disconnect the antenna and move it away from the scanner. Make sure that no other nearby radio or TV sets are turned on near the scanner.

2. Start a search of every frequency range from its lowest frequency to the highest. When the search stops, often without any sound, this is a birdie.
3. Make a list of all the birdies in your scanner for future reference.

## Initializing the Scanner

If the scanner's display locks up or does not work properly after you connect a power source or install batteries, you might need to initialize it.

**Caution:** *This procedure clears the scanner's memory. Initialize the scanner only after trying all other methods to correct issues.*

### To initialize the scanner:

1. Turn off the scanner, then turn it on again. "Multi-system Trunking Scanner" appears.
2. While "Multi-system Trunking Scanner" appears, press **0**.
3. Press **1**.
4. Press **ENT**. "Initializing please stand by" appears for about 5 seconds. When the initialization is complete, M000 appears on the second line of the display. "Bank 0 Ch 00" appears.

**Note:** *Do not turn off the scanner until the initialization is complete.*

## Service and Repair

If your scanner is not performing as it should, take it to your local RadioShack store for assistance. To locate your nearest RadioShack, use the store locator feature on RadioShack's web site ([www.radioshack.com](http://www.radioshack.com)), or call 1-800-The Shack (800-843-7422) and follow the menu options. Modifying or tampering with the scanner's internal components can cause a malfunction and might invalidate its warranty and void your FCC authorization to operate it.

## Scanning Legally

Your scanner covers frequencies used by many different groups including police and fire departments, ambulance services, government agencies, private companies, amateur radio services, military operations, pager services, and wireline (telephone and telegraph) service providers. It is legal to listen to almost every transmission your scanner can receive. However, there are some transmissions you should never intentionally listen to. These include:

- telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- pager transmissions
- any scrambled or encrypted transmissions

According to the Electronic Communications Privacy Act (ECPA), as amended, you are subject to fines and possible imprisonment for intentionally listening to, using, or divulging the contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal).

This scanner is designed to prevent reception of illegal transmissions, in compliance with the law which requires that scanners be manufactured in such a way as to not be easily modifiable to pick up those transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that it is not legal to listen to. Doing so could subject you to legal penalties.

In some areas, mobile use of this scanner is unlawful or requires a permit. Check the laws in your area. It is also illegal in many areas to interfere with the duties of public safety officials by traveling to the scene of an incident without authorization.

We encourage responsible, legal scanner use.

## FCC Notice

This equipment has been tested and found to comply with the limits for a scanning receiver, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

## References

### Appendix A: Glossary

**Frequency** – The signal (expressed in MHz) used by broadcasting radios. To find active frequencies, you can use frequency guides available from your local RadioShack store, frequency lists posted on the Internet, or your scanner's search function.

**Bank** – A storage unit for a group of channels. A channel contains one frequency, and a bank can hold up to 100 channels.

**Channel** – A programmable memory locations for a single frequency.

**Talk Group ID** – A simultaneous trunking transmission that identifies 2-way radio users. This allows trunking systems to allocate a few frequencies to multiple 2-way radio users.

**Sub-bank** – Each bank has an associated Talk Group ID sub-bank. In Closed mode, the scanner only stops if a transmission has a Talk Group ID saved in the associated Talk Group ID sub-bank. In Open Mode, the scanner stops on all transmissions, except those you lock out.

### Appendix B: Search Banks

All scanners tune by steps. Your RadioShack scanner uses steps consistent with the latest US or worldwide standards. If you enter a non-valid step frequency, any scanner will tune to the next step. Some scanner designs do this without showing the correct step in the display. This scanner will show the actual tuned frequency in the display. Because steps are so close together, the audio quality will not be affected by the offset.

Search Bank: *SRO Marine Band*; Receive Mode: *FM*

Ch.	Freq. (MHz)	Ch.	Freq. (MHz)	Ch.	Freq. (MHz)
01	156.0500	21	157.0500	72	156.6250
05	156.2500	22	157.1000	73	156.6750
06	156.3000	23	157.1500	74	156.7250
07	156.3500	24	157.2000 161.8000	77	156.8750
08	156.4000	25	157.2500 161.8500	78	156.9250
09	156.4500	26	157.3000 161.9000	79	156.9750
10	156.5000	27	157.3500 161.9500	80	157.0250
11	156.5500	28	157.4000 162.0000	81	157.0750
12	156.6000	63	156.1750	82	157.1250
13	156.6500	64	156.2250 160.8250	83	157.1750
14	156.7000	65	156.2750	84	157.2250 161.8250
15	156.7500	66	156.3250	85	157.2750 161.8750
16	156.8000	67	156.3750	86	157.3250 161.9250
17	156.8500	68	156.4250	87	157.3750 161.9750
18	156.9000	69	156.4750	88	157.4250
19	156.9500	70	156.5250		
20	157.0000 161.6000	71	156.5750		

**Note:** Some Marine frequencies assign two frequencies to one channel. For example, 157.000 and 161.600 are assigned in Channel 20.

Search Bank: *SR1 CB Band;*  
Receive Mode: *AM*

Ch.	Freq. (MHz)	Ch.	Freq. (MHz)	Ch.	Freq. (MHz)
01	26.9650	15	27.1350	29	27.2950
02	26.9750	16	27.1550	30	27.3050
03	26.9850	17	27.1650	31	27.3150
04	27.0050	18	27.1750	32	27.3250
05	27.0150	19	27.1850	33	27.3350
06	27.0250	20	27.2050	34	27.3450
07	27.0350	21	27.2150	35	27.3550
08	27.0550	22	27.2250	36	27.3650
09	27.0650	23	27.2550	37	27.3750
10	27.0750	24	27.2350	38	27.3850
11	27.0850	25	27.2450	39	27.3950
12	27.1050	26	27.2650	40	27.4050
13	27.1150	27	27.2750		
14	27.1250	28	27.2850		

Search Bank: *SR2 FRS/GMRS/MURS Band*  
Receive Mode: *FM, CT, or DC*

Ch.	Freq. (MHz)	Ch.	Freq. (MHz)	Ch.	Freq. (MHz)
01	462.56250	13	467.68750	25	151.94000
02	462.58750	14	467.71250	26	154.57000
03	462.61250	15	462.55000	27	154.60000
04	462.63750	16	462.57500	28	154.62500
05	462.66250	17	462.60000	29	464.50000
06	462.68750	18	462.62500	30	464.55000
07	462.71250	19	462.65000	31	467.85000
08	467.56250	20	462.67500	32	467.87500
09	467.58750	21	462.70000	33	467.90000
10	467.61250	22	462.72500	34	467.92500
11	467.63750	23	151.82000		
12	467.66250	24	151.88000		

## Search bank: SR3 Public Safety band

Receive Mode: FM, CT, or DC

Freq. (MHz)	Step (kHz)
<b>Group 0</b>	
33.420-33.980	10
37.020-37.420	10
39.020-39.980	10
42.020-42.940	10
44.620-45.860	10
45.880	
45.900	
45.940-46.060	10
46.080-46.500	10
<b>Group 1</b>	
151.820-151.940	7.5
153.770-154.130	7.5
154.145-154.445	7.5
154.570	
154.600	
154.650-154.770	7.5
154.785-154.950	7.5
155.010-155.370	7.5
155.415-155.700	7.5
155.730-156.210	7.5
158.730-159.210	7.5
166.250	
170.150	

Freq. (MHz)	Step (kHz)
<b>Group 2</b>	
453.0375-453.9625	6.25
458.0375-458.9625	6.25
460.0125-460.6375	6.25
462.5500-462.7250	6.25
465.0125-465.6375	6.25
467.5625-467.7125	6.25
<b>Group 3</b>	
764.003125-766.996875	3.125
773.003125-775.996875	3.125
794.003125-796.996875	3.125
803.003125-805.996875	3.125
<b>Group 4</b>	
851.0125-852.0125	12.5
852.0375-853.0375	12.5
853.0625-854.0625	12.5
854.0875-855.0875	12.5
855.1125-856.1125	12.5
856.1375-857.1375	12.5
857.1625-858.1625	12.5
858.1875-859.1875	12.5
859.2125-860.2125	12.5
860.2375-860.9875	12.5
866.0125-868.9875	12.5

## Search bank: SR4 Aircraft

Receive mode: AM, FM

Group	Frequency (MHz)	Step (kHz)
0	108.000-117.99166	8.33
1	118.000-136.99166	8.33
2	138.000-143.9875	12.5
	148.000-150.7875	12.5
3	225.000-379.975	25
	380.000-400.000	12.5

## Search bank: SR5 Amateur band

Receive mode: FM, CT, or DC

Group	Frequency (MHz)	Step (kHz)
0	28.0000-29.7000	5
1	50.0000-54.0000	5
2	144.0000-148.0000	5
3	222.0000-224.9950	5
4	420.0000-450.0000	5
5	902.000-927.9875	12.5
6	1240.0000-1300.0000	6.25

## Search bank: SR6 Railroad

Receive mode: FM, CT, or DC

Frequency (MHz)	Step (kHz)
159.810-161.5650	7.5

## Appendix C: CTCSS / DCS Codes

You can program any of the following codes:

### CTCSS Codes:

67.0 Hz	94.8 Hz	131.8 Hz	171.3 Hz	203.5 Hz
69.3 Hz	97.4 Hz	136.5 Hz	173.8 Hz	206.5 Hz
71.9 Hz	100.0 Hz	141.3 Hz	177.3 Hz	210.7 Hz
74.4 Hz	103.5 Hz	146.2 Hz	179.9 Hz	218.1 Hz
77.0 Hz	107.2 Hz	151.4 Hz	183.5 Hz	225.7 Hz
79.7 Hz	110.9 Hz	156.7 Hz	186.2 Hz	229.1 Hz
82.5 Hz	114.8 Hz	159.8 Hz	189.9 Hz	233.6 Hz
85.4 Hz	118.8 Hz	162.2 Hz	192.8 Hz	241.8 Hz
88.5 Hz	123.0 Hz	165.5 Hz	196.6 Hz	250.3 Hz
91.5 Hz	127.3 Hz	167.9 Hz	199.5 Hz	254.1 Hz

### DCS Codes:

006	050	125	174	255	343	445	526	703
007	051	131	205	261	346	446	532	712
015	053	132	212	263	351	452	546	723
017	054	134	214	265	356	454	565	731
021	065	141	223	266	364	455	606	732
023	071	143	225	271	365	462	612	734
025	072	145	226	274	371	464	624	743
026	073	152	243	306	411	465	627	754
031	074	155	244	311	412	466	631	
032	114	156	245	315	413	503	632	
036	115	162	246	325	423	506	654	
043	116	165	251	331	431	516	662	
047	122	172	252	332	432	523	664	

## Appendix D: Signal Stalker II

Signal Stalker II can search the following bands:

### All Band

Bank.	Freq. (MHz)
0	25.000-54.000
1	108.000-136.99166
2	137.000-174.000
3	216.0025-299.975
4	300.000-405.9875

Bank.	Freq. (MHz)
5	406.000-470.000
6	470.0125-512.000
7	764.000-805.996875
8	806.000-868.9875
9	894.000-960, 1240-1300.000

## PubSafety Band

Freq. (MHz)	Step (kHz)
<b>Group 0</b>	
33.420-33.980	10
37.020-37.420	10
39.020-39.980	10
42.020-42.940	10
44.620-45.860	10
45.880	
45.900	
45.940-46.060	10
46.080-46.500	10
<b>Group 1</b>	
151.820-151.940	7.5
153.770-154.130	7.5
154.145-154.445	7.5
154.570	
154.600	
154.650-154.770	7.5
154.785-154.950	7.5
155.010-155.370	7.5
155.415-155.700	7.5
155.730-156.210	7.5
158.730-159.210	7.5
166.250	
170.150	

Freq. (MHz)	Step (kHz)
<b>Group 2</b>	
453.0375-453.9625	6.25
458.0375-458.9625	6.25
460.0125-460.6375	6.25
462.5500-462.7250	6.25
465.0125-465.6375	6.25
467.5625-467.7125	6.25
<b>Group 3</b>	
764.003125-766.996875	3.125
773.003125-775.996875	3.125
794.003125-796.996875	3.125
803.003125-805.996875	3.125
<b>Group 4</b>	
851.0125-852.0125	12.5
852.0375-853.0375	12.5
853.0625-854.0625	12.5
854.0875-855.0875	12.5
855.1125-856.1125	12.5
856.1375-857.1375	12.5
857.1625-858.1625	12.5
858.1875-859.1875	12.5
859.2125-860.2125	12.5
860.2375-860.9875	12.5
866.0125-868.9875	12.5

## Appendix E: Talk Group Format

## Motorola

For *Motorola Type I*, enter the block number, fleet number and subfleet number.

Fleet No.	Subfleet No.
XXX	XX
Example: XXX-XX	

*Motorola Type II* talk group IDs are 4- or 5-digit numbers, divisible by 16.

## EDACS

Enter either a four-digit *decimal* number from 0001 to 2047.

**Agency Fleet Subfleet (AFS)** numbers range from 00-001 to 15-157. The default EDACS setting is decimal.

## To use AFS format:

1. Press **FUNC** then 2. "AFS For mat" appears briefly.
2. Enter the AFS number:

Agency No.	Fleet No.	Subfleet No.
XX	XXXX	XXXX
Example: XXXXXX-XXXX		

## LTR

Enter the area code, home repeater and user ID.

Area Code	Home Repeater	User ID
0-1	01-20	000-254
Example: 010123		



## Appendix F: Specifications

### Frequency Coverage:

25.000-26.960 MHz.....	(in 10 kHz steps/AM)
26.965-27.405 MHz.....	(in 10 kHz steps/AM)
27.410-29.505 MHz.....	(in 5 kHz steps/AM)
29.510-29.700 MHz.....	(in 5 kHz steps/FM)
29.710-49.830 MHz.....	(in 10 kHz steps/FM)
49.835-54.000 MHz.....	(in 5 kHz steps/FM)
108.000-136.9916 MHz.....	(in 8.33 kHz steps/AM)
137.000-137.995 MHz.....	(in 5 kHz steps/FM)
138.000-143.9875 MHz.....	(in 12.5 kHz steps/FM)
144.000-147.995 MHz.....	(in 5 kHz steps/FM)
148.000-150.7875 MHz.....	(in 12.5 kHz steps/FM)
150.800-150.845 MHz.....	(in 5 kHz steps/FM)
150.8525-154.4975 MHz.....	(in 7.5 kHz steps/FM)
154.515-154.640 MHz.....	(in 5 kHz steps/FM)
154.650-156.255 MHz.....	(in 7.5 kHz steps/FM)
156.275-157.450 MHz.....	(in 25 kHz steps/FM)
157.470-161.5725 MHz.....	(in 7.5 kHz steps/FM)
161.600-161.975 MHz.....	(in 5 kHz steps/FM)
162.000-174.000 MHz.....	(in 12.5 kHz steps/FM)
216.0025-219.9975 MHz.....	(in 5 kHz steps/FM)
220.000-224.995 MHz.....	(in 5 kHz steps/FM)
225.000-379.975 MHz.....	(in 25 kHz steps/AM)
380.000-419.9875 MHz.....	(in 12.5 kHz steps/FM)
420.000-450.000 MHz.....	(in 5 kHz steps/FM)
450.00625-469.99375 MHz.....	(in 6.25 kHz steps/FM)
470.000-512.000 MHz.....	(in 12.5 kHz steps/FM)
764.000-766.996875 MHz.....	(in 3.125 kHz steps/FM)
773.000-775.996875 MHz.....	(in 3.125 kHz steps/FM)
794.000-796.996875 MHz.....	(in 3.125 kHz steps/FM)
803.000-805.996875 MHz.....	(in 3.125 kHz steps/FM)

806.000-823.9875 MHz.....	(in 12.5 kHz steps/FM)
849.000-868.9875 MHz.....	(in 12.5 kHz steps/FM)
894.000-939.9875 MHz.....	(in 12.5 kHz steps/FM)
940.000-960.000 MHz.....	(in 6.25 kHz steps/FM)
1240.000-1300.000 MHz.....	(in 6.25 kHz steps/FM)

Memory Channels / Banks .....	1000 / 10
Talk group ID memories.....	1,500
ID memory banks / Sub-banks .....	10 / 5
Number of memory IDs per sub-bank.....	30

### Sensitivity (20 dB S/N):

#### FM:

25–54 MHz .....	0.3 $\mu$ V
108–136.99166 MHz .....	0.3 $\mu$ V
137–174 MHz .....	0.5 $\mu$ V
216.0025–224.975MHz.....	0.5 $\mu$ V
225-299.975 MHz.....	0.5 $\mu$ V
300-405.975 MHz.....	0.8 $\mu$ V
406–512 MHz .....	0.5 $\mu$ V
764–960 MHz .....	0.7 $\mu$ V
1240–1300 MHz.....	0.7 $\mu$ V

#### AM:

25–54 MHz .....	1 $\mu$ V
108–136.99166 MHz .....	1 $\mu$ V
137–174 MHz .....	1.5 $\mu$ V
216.0025–224.975MHz.....	1.5 $\mu$ V
225-299.975 MHz.....	2 $\mu$ V
300-405.975 MHz.....	3 $\mu$ V
406–512 MHz .....	2 $\mu$ V
764–960 MHz .....	2 $\mu$ V
1240–1300 MHz.....	3 $\mu$ V

## Selectivity:

All AM and FM (except AM 25 – 27.995 MHz).....	6 dB +/-8 kHz
.....	-50 dB +/-17 kHz
AM 25 – 27.995 MHz.....	-6 dB +/-4 kHz
.....	-50 dB +/-6 kHz
Spurious Rejection (at 154.1 MHz FM).....	40 dB
Scanning Rate .....	Up to 60 Channels per Second
Search Rate .....	Up to 78 Steps per Second
Delay Time .....	2 seconds
Intermediate Frequencies (IF):	
1st.....	380.8 MHz
2nd .....	21.4 MHz
3rd .....	455 kHz
Priority Sampling .....	2 seconds
Operating Temperature .....	-14 to 140° F (-20 to 60° C)
IF Rejection	
380.8 MHz at 154.1 MHz.....	60 dB
21.4 MHz at 154.1 MHz.....	100 dB
Squelch Sensitivity:	
Threshold (FM and AM).....	0.5 uV
Tight (FM) .....	25 dB
Tight (AM).....	20 dB
Antenna Impedance.....	50 Ohms
Audio Output Power (10% THD) .....	1.5W
Built-in Speaker.....	3 Inches (77 mm) (8-ohm, Dynamic Type)
Power Requirements .....	13.8V
Current Drain (Squelched) .....	200 mA
Dimensions (HWD) .....	2 1/4 x 7 1/4 x 5 5/16 Inches (55 x 185 x 135 mm)
Weight (without antenna).....	27.7 oz. (790 g)

Specifications and depictions are subject to change and improvement without notice. Actual product may vary from the images found in this document.

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